

AMENDMENTS TO THE CLAIMS

The following listing of claims is provided in accordance with 37 C.F.R. § 1.121.

1. (Currently amended) An apparatus for acknowledging a data transfer, comprising:
a processor configured to transfer data according to a plurality of protocols of a protocol stack comprising:
a first protocol ~~that is adapted to generate~~ for initiating a request for a data transfer;
and
a second protocol ~~for that is adapted to:~~
~~receive~~ receiving the request for the data transfer from the first protocol;
~~determine~~ determining whether the request for the data transfer contains a request for acknowledgement of completion of the data transfer;
~~send~~ sending a performance request corresponding to the request for data transfer to a third protocol; and
if the request for data transfer does contain a request for acknowledgement of the completion of the data transfer, ~~set~~ setting a variable in memory to wait for an event to correspond to the completion of the request for data transfer and ~~send~~ sending an acknowledgement to the first protocol upon the occurrence of the event.
2. (Original) The apparatus set forth in claim 1, wherein the first protocol is an internet small computer systems interface (“iSCSI”) protocol.
3. (Original) The apparatus set forth in claim 1, wherein the second protocol is an internet small computer systems interface extensions for remote direct memory access (“iSER”) protocol.
4. (Original) The apparatus set forth in claim 1, wherein the request for the data transfer comprises an attribute that indicates the request for acknowledgement of completion of the data transfer.

5. (Original) The apparatus set forth in claim 4, wherein a value of an error recovery level is notified to the second protocol from the first protocol.

6. (Original) The apparatus set forth in claim 1, wherein the third protocol is a remote direct memory access ("RDMA") protocol.

7. (Original) The apparatus set forth in claim 1, wherein the event relates to a zero length remote direct memory access ("RDMA") read completion.

8. (Currently amended) A network, comprising:
a plurality of systems, at least one of the plurality of systems comprising a protocol stack and a process;
at least one input/output device;
a network that connects the plurality of systems and the at least one input/output device for communication; and
wherein the protocol stack comprises:
a first protocol layer ~~that interacts with the~~ for interacting with a consumer;
a second protocol layer for ~~that is adapted to:~~
~~receive~~ receiving a data exchange request from the first protocol layer;
~~examine~~ examining the data exchange request to determine if an
acknowledgement request is indicated;
~~send~~ sending a performance request corresponding to the data exchange request to a third protocol layer; and
if the data exchange request contains the acknowledgement request, ~~set~~ setting
a variable in memory to wait for an event that corresponds to the completion of the performance request and ~~send~~ sending an acknowledgement to the first protocol layer upon the occurrence of the event.

9. (Currently amended) The network set forth in claim 8, wherein the third protocol layer interacts with the second protocol layer and the third layer is for ~~is adapted to:~~

~~receive~~ receiving the performance request that corresponds to the data exchange request; and

~~transmit~~ transmitting a message to one of the at least one of the plurality of systems and the at least one input/output device via the network.

10. (Original) The network set forth in claim 9, comprising a remote direct memory access network interface card ("RNIC") that is used by the protocol stack to exchange the message between the at least one of the plurality of systems and the at least one input/output device via the network.

11. (Original) The network set forth in claim 9, wherein the message is a remote direct memory access ("RDMA") write message.

12. (Original) The network set forth in claim 9, wherein the message is a zero length remote direct memory access ("RDMA") read message.

13. (Original) The network set forth in claim 8, wherein the second protocol layer is an internet small computer systems interface extensions for remote direct memory access ("iSER") protocol.

14. (Original) The network set forth in claim 8, wherein the data exchange request comprises an attribute and data.

15. (Currently amended) The network set forth in claim 8, wherein the process operates according to ~~[[is]]~~ a small computer systems interface protocol ("SCSI").

16. (Currently amended) A method of acknowledging a data transfer, the method comprising:

transferring data according to a plurality of protocols;

receiving a request for a data transfer according to ~~from~~ a first protocol;

determining whether the request for the data transfer contains a request for acknowledgement of completion of the data transfer;

sending a performance request corresponding to the request for data transfer according
to a second protocol; and

if the request for data transfer does contain a request for acknowledgement of
completion of the data transfer, setting a variable in memory to wait for an
event corresponding to completion of the data transfer and sending an
acknowledgement to the first protocol upon the occurrence of the event.

17. (Original) The method set forth in claim 16, comprising defining the first
protocol as an internet small computer systems interface ("iSCSI") protocol.

18. (Original) The method set forth in claim 16, comprising defining the second
protocol as a remote direct memory access ("RDMA") protocol.

19. (Original) The method set forth in claim 16, comprising defining the event to
relate to a zero length remote direct memory access ("RDMA") read message completion.

20. (Original) The method set forth in claim 16, comprising defining the event to
relate to a remote direct memory access ("RDMA") write message completion.

21. (Original) The method set forth in claim 16, comprising establishing an error
recovery level by the first protocol to indicate the error recovery level in the request for
acknowledgement of completion of the data transfer.

22. (Currently amended) An apparatus for acknowledging a data transfer,
comprising:

means for receiving a request for a data transfer according to ~~from~~ a first protocol;

means for determining whether the request for the data transfer contains a request for
acknowledgement of completion of the data transfer according to ~~from~~ a
second protocol;

means for sending a performance request corresponding to the request for data transfer
according to a third protocol; and

means for setting a variable in memory to wait for an event to correspond to the completion of the performance request and sending an acknowledgement according to the first protocol upon the occurrence of the event if the request for the data transfer does contain the request for acknowledgement of completion of the data transfer.

23. (Currently amended) A tangible medium having a program for acknowledging a data transfer, comprising:

~~a machine-readable medium;~~

code for performing a first protocol stored on the tangible medium ~~machine-readable medium, the first protocol being adapted to generate~~ for generating a request for a data transfer; and

code for performing a second protocol stored on the machine readable medium, ~~the second protocol being adapted to~~ for:

~~receive~~ receiving the request for the data transfer from the first protocol;

~~determine~~ determining whether the request for the data transfer contains a request for acknowledgement of completion of the data transfer;

~~send~~ sending a performance request corresponding to the request for data transfer to a third protocol; and

~~set~~ setting a variable in memory to wait for an event to correspond to the completion of the performance request and ~~send~~ sending an acknowledgement to the first protocol upon the occurrence of the event if the request for data transfer does contain a request for acknowledgement of completion of the data transfer.